

**Supplementary Figure 1. RSV and MPV F ELISA titers.** Antigens (pre-/post-fusion RSV F, pre-/post-fusion MPV F and RPM-1) were coated onto plates. The serum from 5 mice immunized with pre-fusion MPV F (MPV pre), post-fusion MPV F (MPV post) and RPM-1 was diluted 1:100-1:32,000 and binding to the antigens was detected using a secondary anti-mouse antibody (Methods).

RSV F post coated						RSV post F coated						RSV F post coated					
Mouse -->	MPV pre	MPV pre	MPV pre	MPV pre	MPV pre	Mouse -->	MPV	MPV	MPV	MPV	MPV	Mouse -->	RPM-1	RPM-1	RPM-1	RPM-1	RPM-1
Dilution factor	(1)	(2)	(3)	(4)	(5)	Dilution factor	post (1)	post (2)	post (3)	post (4)	post (5)	Dilution factor	(1)	(2)	(3)	(4)	(5)
100	0.04	0.00	0.07	0.00	-0.01	100	0.01	0.00	-0.02	-0.01	0.03	100	-0.01	0.39	0.01	0.04	0.05
500	0.01	-0.01	0.01	-0.01	-0.01	500	0.01	0.02	0.00	0.01	0.05	500	0.00	0.12	0.00	0.01	0.00
1000	0.01	-0.02	0.01	0.00	-0.02	1000	0.00	0.00	0.04	0.01	-0.01	1000	0.00	0.04	-0.01	-0.01	-0.02
2000	0.00	-0.01	0.02	0.00	-0.01	2000	0.00	0.00	-0.01	0.00	0.00	2000	0.01	0.01	0.00	-0.01	-0.01
4000	-0.01	0.16	0.23	-0.01	-0.02	4000	0.02	-0.01	0.00	-0.01	0.00	4000	0.00	0.00	-0.01	-0.01	-0.02
8000	0.00	0.01	0.00	-0.01	-0.01	8000	0.01	0.00	-0.01	0.00	0.00	8000	0.00	0.01	-0.01	0.00	0.00
16000	0.01	0.01	0.00	0.00	0.01	16000	0.03	0.00	0.01	0.01	0.02	16000	0.00	0.00	0.00	0.00	0.00
32000	0.03	0.02	0.02	0.02	0.01	32000	0.02	0.00	0.00	0.01	0.00	32000	0.01	0.00	0.01	0.12	0.00

  

RSV F pre coated						RSV pre F coated						RSV pre F coated					
Mouse -->	MPV pre	MPV pre	MPV pre	MPV pre	MPV pre	Mouse -->	MPV	MPV	MPV	MPV	MPV	Mouse -->	RPM-1	RPM-1	RPM-1	RPM-1	RPM-1
Dilution factor	(1)	(2)	(3)	(4)	(5)	Dilution factor	post (1)	post (2)	post (3)	post (4)	post (5)	Dilution factor	(1)	(2)	(3)	(4)	(5)
100	0.01	0.00	0.00	0.00	0.01	100	0.01	0.00	0.00	0.00	0.01	100	0.00	0.12	0.00	0.01	0.05
500	0.00	0.00	0.00	0.01	0.00	500	0.00	0.00	0.00	0.01	0.00	500	0.01	0.04	0.00	0.01	0.01
1000	0.00	0.00	0.00	0.00	0.00	1000	0.00	0.00	0.00	0.00	0.00	1000	0.00	0.02	0.00	0.01	0.00
2000	0.00	0.00	0.00	0.00	0.00	2000	0.01	0.01	0.01	0.01	0.01	2000	0.01	0.02	0.01	0.02	0.01
4000	-0.01	-0.01	-0.01	0.00	-0.01	4000	0.00	0.00	0.00	0.00	0.00	4000	0.00	0.01	0.00	0.00	-0.01
8000	0.00	-0.01	0.00	0.00	0.00	8000	0.00	0.00	0.00	0.00	0.00	8000	0.00	0.01	0.01	0.00	0.00
16000	-0.01	-0.01	-0.01	0.00	-0.01	16000	0.01	0.00	0.00	0.00	0.00	16000	0.00	0.01	0.00	0.00	0.00
32000	0.00	0.00	0.00	0.00	0.00	32000	0.02	0.01	0.01	0.01	0.01	32000	0.01	0.02	0.01	0.02	0.01

  

MPV pre coated						MPV pre F coated						MPV pre F coated					
Mouse -->	MPV pre	MPV pre	MPV pre	MPV pre	MPV pre	Mouse -->	MPV	MPV	MPV	MPV	MPV	Mouse -->	RPM-1	RPM-1	RPM-1	RPM-1	RPM-1
Dilution factor	(1)	(2)	(3)	(4)	(5)	Dilution factor	post (1)	post (2)	post (3)	post (4)	post (5)	Dilution factor	(1)	(2)	(3)	(4)	(5)
100	1.2	0.75275	0.82325	0.6065	0.98225	100	0.49	0.49	0.68	0.38	0.88	100	0.74	1.18	0.79	1.07	1.03
500	0.916	0.306	0.299	0.17825	0.49825	500	0.19	0.17	0.26	0.15	0.30	500	0.29	0.95	0.33	0.56	0.68
1000	0.6795	0.13175	0.141	0.09	0.3175	1000	0.19	0.12	0.17	0.08	0.14	1000	0.20	0.75	0.20	0.36	0.46
2000	0.418	0.07125	0.07	0.045	0.172	2000	0.22	0.13	0.16	0.09	0.11	2000	0.10	0.45	0.18	0.27	0.27
4000	0.218	0.03225	0.025	0.02075	0.069	4000	0.20	0.16	0.09	0.08	0.11	4000	0.08	0.25	0.09	0.15	0.16
8000	0.0925	0.016	0.0175	0.011	0.0295	8000	0.16	0.11	0.05	0.06	0.05	8000	0.05	0.14	0.07	0.07	0.08
16000	0.04175	0.01275	0.01175	0.00525	0.01725	16000	0.13	0.09	0.09	0.08	0.09	16000	0.07	0.09	0.05	0.08	0.08
32000	0.0315	0.0195	0.02125	0.01825	0.015	32000	0.21	0.33	0.15	0.16	0.16	32000	0.16	0.17	0.08	0.11	0.10

  

MPV post F coated						MPV post F coated						MPV post F coated					
Mouse -->	MPV pre	MPV pre	MPV pre	MPV pre	MPV pre	Mouse -->	MPV	MPV	MPV	MPV	MPV	Mouse -->	RPM-1	RPM-1	RPM-1	RPM-1	RPM-1
Dilution factor	(1)	(2)	(3)	(4)	(5)	Dilution factor	post (1)	post (2)	post (3)	post (4)	post (5)	Dilution factor	(1)	(2)	(3)	(4)	(5)
100	1.2065	0.70025	0.78875	0.58825	0.934	100	0.30	0.31	0.47	0.26	0.63	100	0.58	1.01	0.71	0.92	1.02
500	0.89775	0.2605	0.28475	0.1715	0.556	500	0.09	0.09	0.18	0.07	0.21	500	0.23	0.80	0.26	0.43	0.68
1000	0.642	0.13125	0.128	0.08075	0.3065	1000	0.04	0.03	0.07	0.03	0.09	1000	0.12	0.56	0.13	0.30	0.37
2000	0.36225	0.0575	0.0615	0.041	0.142	2000	0.06	0.04	0.05	0.03	0.06	2000	0.09	0.41	0.09	0.16	0.25
4000	0.18275	0.02075	0.02225	0.01675	0.058	4000	0.01	0.01	0.02	0.01	0.03	4000	0.05	0.20	0.04	0.08	0.11
8000	0.07875	0.008	0.0095	0.009	0.0285	8000	0.01	0.01	0.01	0.01	0.02	8000	0.03	0.10	0.03	0.04	0.06
16000	0.027	-0.00275	-0.00125	0.0035	0.00825	16000	0.01	0.01	0.01	0.01	0.01	16000	0.01	0.05	0.02	0.03	0.02
32000	0.01575	0.00175	0.0025	0.006	0.0045	32000	0.03	0.02	0.02	0.02	0.04	32000	0.03	0.06	0.04	0.03	0.03

  

RPM-1 coated						RPM-1 coated						RPM-1 coated					
Mouse -->	MPV pre	MPV pre	MPV pre	MPV pre	MPV pre	Mouse -->	MPV	MPV	MPV	MPV	MPV	Mouse -->	RPM-1	RPM-1	RPM-1	RPM-1	RPM-1
Dilution factor	(1)	(2)	(3)	(4)	(5)	Dilution factor	post (1)	post (2)	post (3)	post (4)	post (5)	Dilution factor	(1)	(2)	(3)	(4)	(5)
100	1.33775	0.66925	0.69925	0.54275	1.0445	100	0.29	0.38	0.61	0.24	0.78	100	0.80	1.24	0.87	1.06	1.22
500	0.9425	0.26625	0.2175	0.147	0.532	500	0.06	0.07	0.17	0.06	0.21	500	0.32	1.10	0.33	0.59	0.73
1000	0.676	0.1175	0.11075	0.07975	0.2875	1000	0.02	0.03	0.07	0.02	0.09	1000	0.15	0.76	0.16	0.32	0.45
2000	0.40375	0.06075	0.056	0.05025	0.16825	2000	0.01	0.01	0.03	0.01	0.04	2000	0.06	0.48	0.08	0.17	0.27
4000	0.19675	0.0325	0.02725	0.0225	0.0685	4000	0.00	0.00	0.01	0.00	0.02	4000	0.03	0.26	0.03	0.07	0.11
8000	0.08275	0.016	0.0165	0.01175	0.0335	8000	0.00	0.00	0.00	0.00	0.01	8000	0.01	0.12	0.01	0.04	0.05
16000	0.0385	0.01275	0.01225	0.00425	0.0175	16000	0.00	0.00	0.00	0.00	0.00	16000	0.00	0.05	0.00	0.02	0.02
32000	0.033	0.02175	0.02	0.02025	0.0195	32000	0.01	0.00	0.00	0.00	0.01	32000	0.01	0.03	0.01	0.01	0.01

Supplemental Figure 1